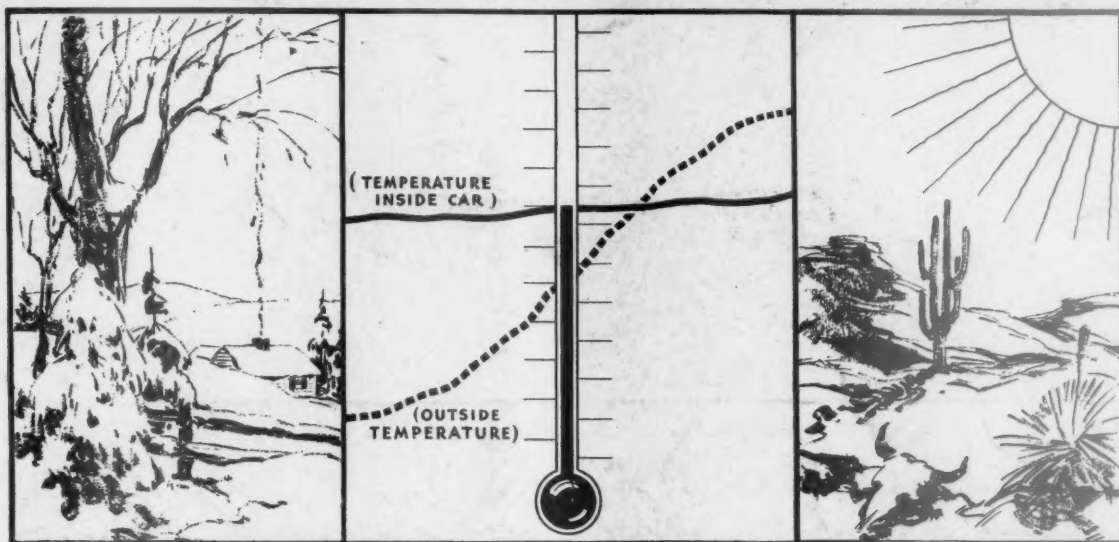


MARCH 26, 1932

Railway Age

FOUNDED IN 1856



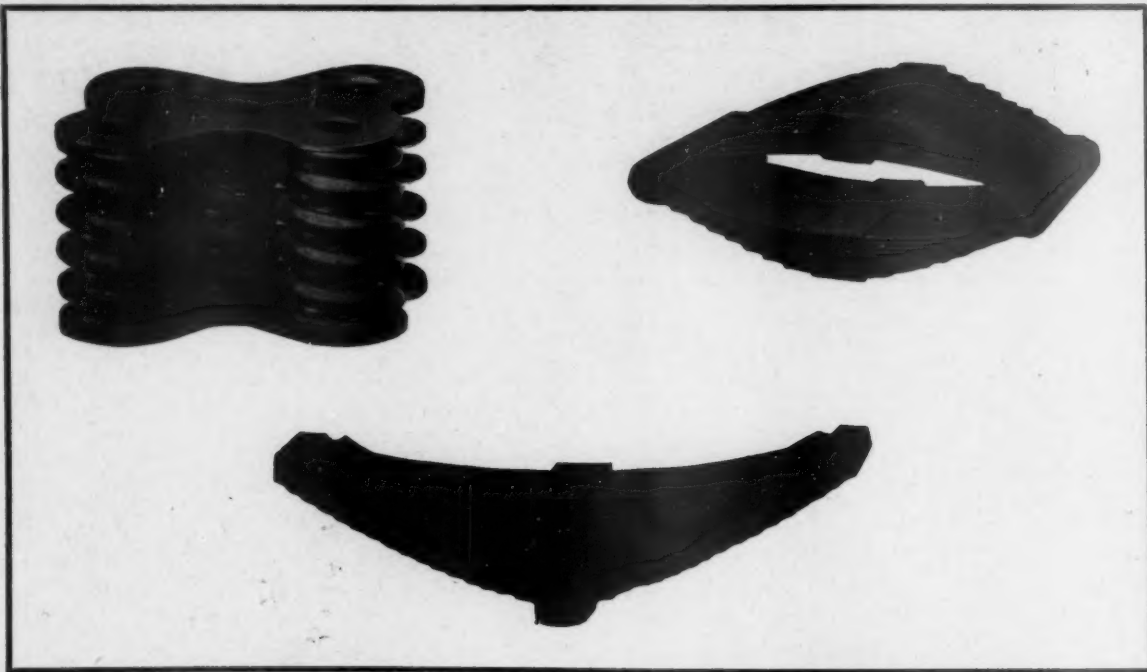
AIR CONDITIONING NOW AVAILABLE AT MODERATE COST

THE air conditioning system, which we have developed and are now applying to a number of railroad passenger cars, is the result of exhaustive research extending over the last five years, and of experience gained from operating eight cars more than 500,000 miles. • Contrary to the general opinion, the cost of installing, maintaining and operating this air conditioning system is *not excessive*. In many cases 18 additional round-trip passengers per car per year would offset the annual operating cost, including amortization, depreciation, and maintenance prorated over a 5-year period.

PULLMAN CAR & MANUFACTURING CORPORATION

General Offices: Chicago, Illinois

*Pacific Coast Sales Office:*RUSS BUILDING
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Birmingham, Ala.



It just can't be done

Railroad Officials who approve the reclamation of springs in their own shops do not save money by doing so. It simply can't be done that way.

A repaired spring must be equal to a new one in uniformity and performance. Otherwise it throws parts out of alignment and unbalances the equalizing mechanism. To be equal to new it must be as carefully reworked and heat treated as a new spring. This involves too much costly machinery to

be justified by the small volume in tonnage that any one railroad has to handle. It requires skilled workmen who are employed steadily at spring making. It should be directed by a well-rounded organization with every facility for advancing the art through constant research.

Seldom can a railroad justify this organization and equipment and so it is better in every way to send broken springs to us for reclamation.



Railway Steel-Spring Company

30 CHURCH ST., NEW YORK

Branch Offices:

Chicago, Ill.
St. Paul, Minn.

Detroit, Mich.
Washington, D. C.

St. Louis, Mo.
Cleveland, Ohio

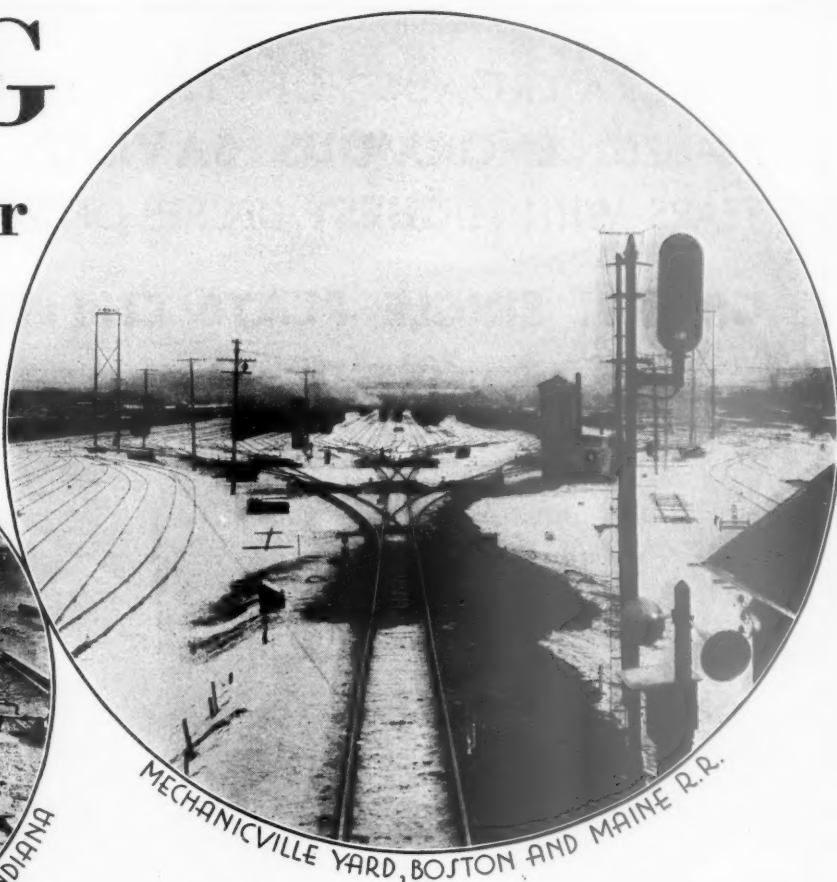
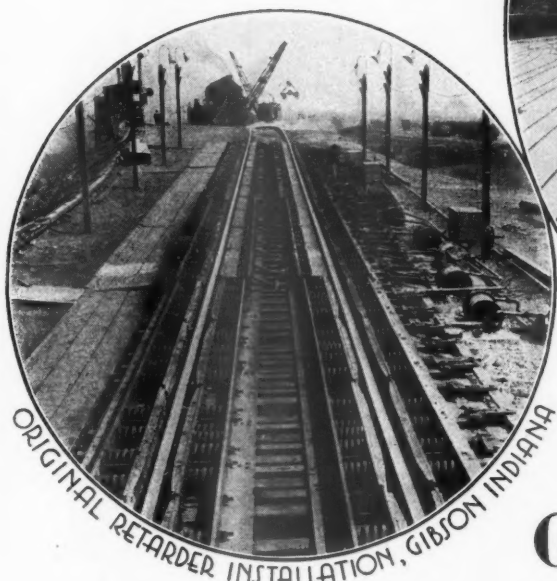
Pittsburgh, Pa.
Denver, Colo.

Montreal, Que.
San Francisco, Cal.

SAVING

52 Cents per Car

with



G-R-S CAR RETARDERS

In December 1924, the first retarder installation in the United States was completed at Gibson, Indiana, on the Indiana Harbor Belt Railroad. Economical car classification was inaugurated at that time. A statement in February 1925, of this yard showed a saving of 32.7 cents per car as compared with the previous year. Rapid progress

in the adoption of retarders followed owing largely to economies effected.

At Mechanicville Yard on the B. & M. actual operating statistics available show a saving of 52.4 cents per car classified as shown by the following statement:—

	1927 Two Months	1928 Two Months
Cars received	50,193	51,298
Freight pay-roll (dollars)	56,621	30,961
Cost per car (cents)	112.8	60.4
Locomotive repairs (dollars, decrease of)		3,151
Fuel (dollars, decrease of)		4,355
Hostling (dollars, decrease of)		887
Total saving for two months (dollars)		34,053
Total savings per year (dollars)		221,312

From the first installation, retarders have proven to be the economical and speedy means of car classification at both large and small installations. Mechanicville is one of 18 G-R-S equipped retarder yards on 10 different railroads which has benefitted by economical car classification.

A saving of 52.4 cents per car classified should mean much to every operating official. Why not

consult our nearest district office regarding the saving which can be effected at your particular yard.

GENERAL RAILWAY SIGNAL COMPANY

ROCHESTER, N. Y. A-885
 New York Chicago
 Affiliated Companies' Offices: Montreal St. Louis
 Tokyo Barcelona Melbourne Paris
 Buenos Aires Calcutta

THE RAILROADS OF THE UNITED STATES HAVE
REALIZED **ENORMOUS SAVINGS** DURING THE PAST 2
YEARS WITH **HIGHEST** DEGREE OF **SAFETY** BY USE OF . . .

GRIFFIN SINGLE PLATE CHILLED TREAD WHEELS

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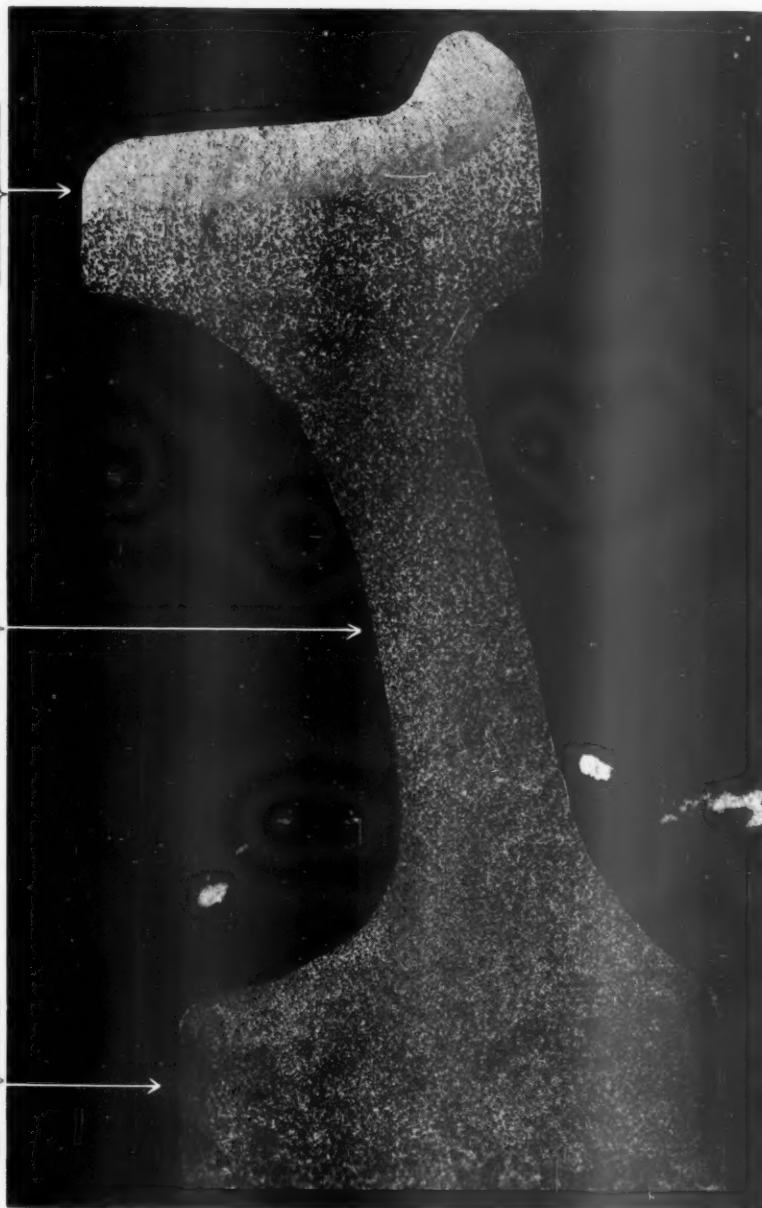
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Hardest known Metal.
Deep chilled wearing sur-
face of tread and Flange.
Greatest mileage per unit of
wear.

The Strong Single Plate.
Withstands extreme heat
stresses and carries the
heaviest loads.

Soft Hubs.
Easy to machine and fit to
axles.
Lowest machine shop costs.



THE FOOD SUPPLY OF THE NATION IS CARRIED ON CHILLED TREAD WHEELS

GRIFFIN WHEEL COMPANY

410 NORTH MICHIGAN AVENUE

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Vol. 92

March 26, 1932

No. 13

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Claude R. Porter, chairman, Interstate Commerce Commission, answers critics
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Tells how the Reading and the Cotton Belt, operating under widely different
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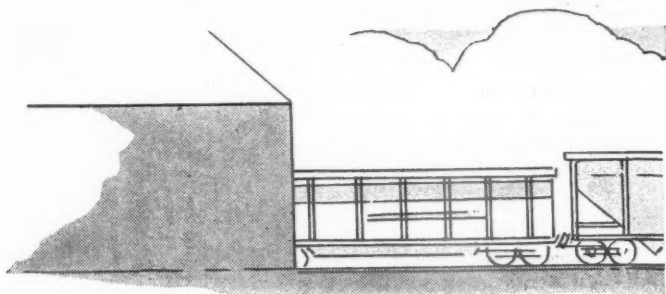
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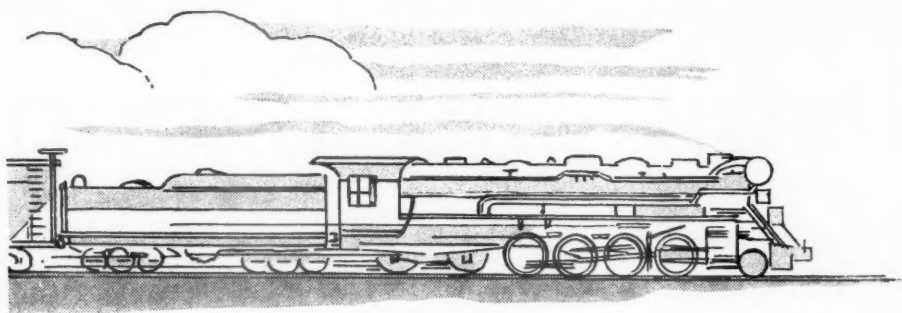
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**OW YOU HAVE
to increase your**





A BETTER CHANCE *ton-mile profits!"*

IF these durable freight cars made from Armco sheets and plates could speak, they would relate some convincing histories about increased earnings from heavy rolling stock . . . Case records about fewer repairs and replacements . . . about reduced shop costs and *extra service miles*. Hoppers, gondolas, box cars, refrigerator cars—all would tell of money saved and profits earned for thrifty railroad buyers. Small wonder, though, when you think about it. Armco sheets and plates are made expressly to do these very things. The iron, or steel, is refined to just the right degree . . . and rolled on Armco-invented continuous mills noted for fine precision. Every sheet, every plate, is searchingly inspected for the slightest flaw before shipment. If you are interested in sheets and plates like these for your freight cars, we shall be glad to discuss their application to your needs. Just get in touch with the nearest office.

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RAILROAD PRODUCTS

SPECIAL CAR SIDING SHEETS

LOCOMOTIVE JACKET SHEETS

FREIGHT CAR SHEETS AND PLATES

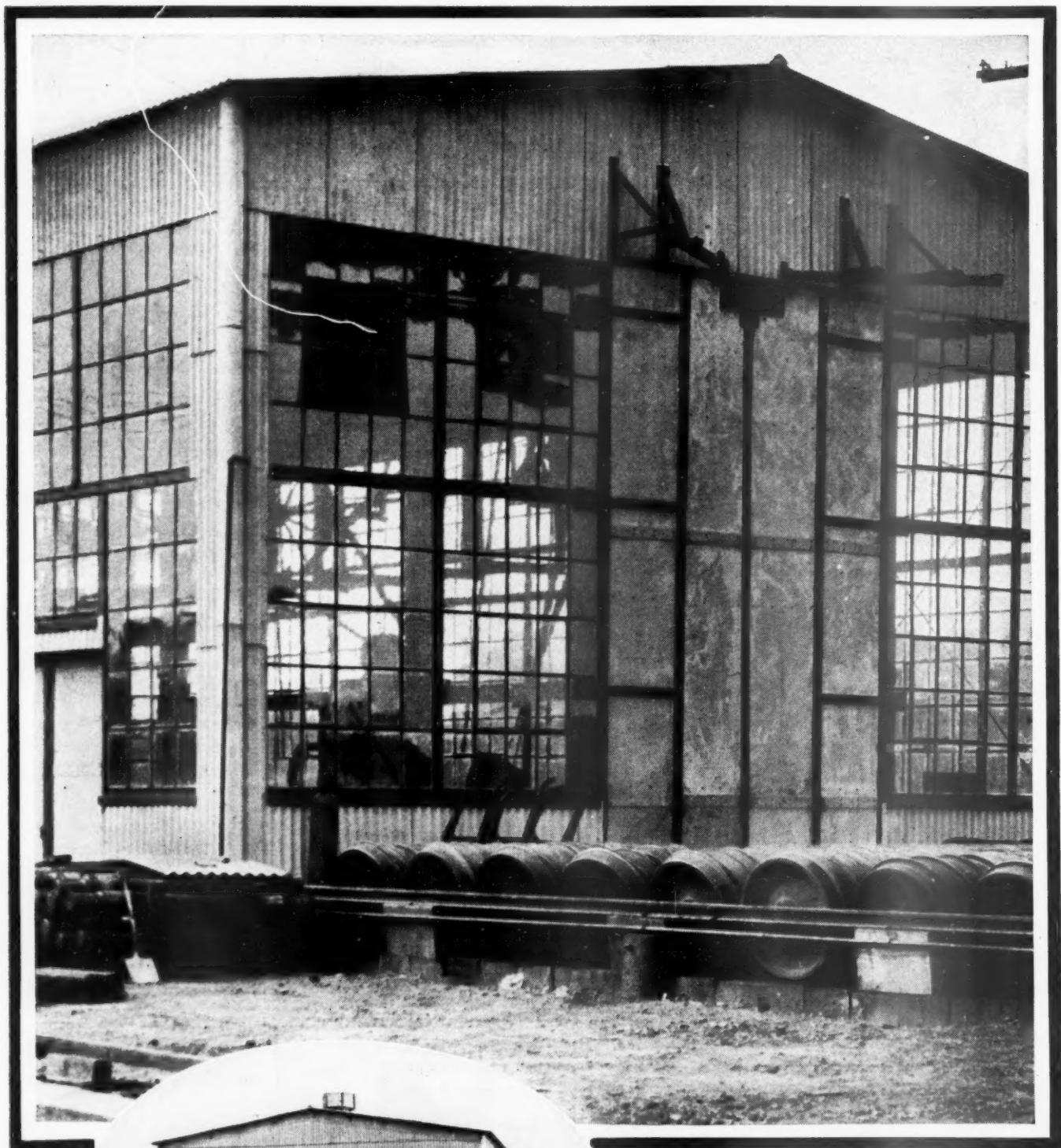
PASSENGER CAR SHEETS AND PLATES

GALVANIZED INGOT IRON
AND STEEL SHEETS

HOT AND COLD ROLLED INGOT IRON
AND STEEL SHEETS

WROUGHT STEEL WHEELS

The Railroad Shop



IN THE "FRISCO YARDS" at Yale, Tenn., Transite is used for roofing and siding on the car wheel shop, machine shop, car department, power house and other buildings. Ventilators, interior partitions, the smoke jacks in the roundhouse, even the enormous doors of the car wheel shop (shown above) are made of this durable material.

banishes Corrosion . . .

Buildings, roofed and sided with *imperishable* TRANSITE, never need protective painting . . .

IN THE NEW SHOPS of the St. Louis and San Francisco R. R. at Yale, Tenn., is something different in the construction of railroad buildings. Something better . . . more modern . . . more practical . . . less expensive — *Transite construction*.

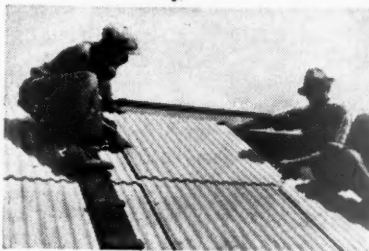
Flooded with daylight, these steel frame buildings are roofed and sided with J-M Corrugated Transite. Transite that is immune to corrosion . . . that never needs painting . . . that requires no replacement or repairs . . . that is completely fire-proof . . . forever free from all maintenance costs.

For Transite is made of asbestos fibres and Portland cement — combined under tremendous pressure into unlaminated sheets of exceptional strength and durability. Even locomotive gases do not corrode it nor does steam alter its condition. Transite, in fact, merely gets stronger and tougher with age.

What the "Frisco Lines" secured when they put up these buildings was more than ordinary housing for their operations. They reduced steel work to a minimum. They secured — at figures that should interest every railroad executive — immunity from deterioration, from fire and corrosion losses; and more important still, the assurance of long years of cost-free service.

TRANSITE is 90% salvagable. When expansion calls for additional shop space Transite can be re-erected without loss

Visualize for a moment the many types of skeleton frame construction your railroad maintains. For the roofs and walls of these buildings — all the way from platform canopies to the larger terminal structures — Transite offers you long life and an end to maintenance costs. For full particulars, write Johns-Manville, 292 Madison Avenue, New York City.



we serve EVERY PHASE OF TRANSPORTATION

For over half a century Johns-Manville has kept pace with railroading progress. Of the more than 100 products that Johns-Manville offers to the transportation industry, many have been developed exclusively for railroad service — and are the result of extensive research work done with and for the railroads.

For Motive Power and Rolling Stock Departments

Locomotive Lagging . . . Passenger Car Insulation . . . Refrigerator Car Insulation . . . Tank Car Insulation . . . Refrigerator Car Flooring . . . Masticoke Flooring . . . Tile Flooring . . . Truss Plate Steel Car Flooring . . . Asphalt Plank . . . Insulation for all Temperatures . . . Refractory Cements . . . Packings . . . Engineers' Insulating Tape . . . Front End Gasketing Tape . . . Electrical Materials . . . Acoustical Treatment.

For Buildings and Structures

Transite Smoke Jacks . . . Built-up Roofing . . . Asbestos and Asphalt Shingles . . . Transite Roofing and Siding . . . Ready-to-Lay Roofing . . . Industrial Flooring . . . Tile Flooring . . . Waterproofing . . . Insulation for all Temperatures . . . Packings . . . Refractory Cements . . . Acoustical Treatment.

For Maintenance of Way

Fireproof Bridge Decking . . . Asphalt Plank . . . Electrical Conduit and Materials . . . Celite-for-Concrete . . . Built-up Roofing . . . Asbestos and Asphalt Shingles . . . Transite Roofing and Siding . . . Ready-to-lay Roofing . . . Waterproofing.



Johns-Manville

S E R V I C E T O T R A N S P O R T A T I O N



Strictly Modern Locomotives Reduce Operating Costs For The Chicago & North Western

THE CLASS "H" LOCOMOTIVE

Cylinders	27" x 32"
Drivers, diameter	76"
Steam pressure	275 lb.
Grate area	100 sq. ft.
Water heating surface	5214 sq. ft.
Superheating surface	2257 sq. ft.
Weight on drivers	288,000 lb.
Weight, total engine	498,000 lb.
Traction force, main cylinders	71,800 lb.
Traction force, with booster	84,200 lb.

LATE in 1929, the Chicago & North Western Railway placed in service a group of 35 locomotives of the 4-8-4 type designated as Class H. These locomotives are of exceptionally high capacity for an eight-coupled design, and they are used in either freight or passenger service, according to traffic requirements. On many runs, they operate without change between Chicago and Omaha, a distance of 488.7 miles.

In operation, these locomotives have been highly satisfactory, showing remarkable freedom from engine failures; and they have effected many economies. Thus, between Chicago and Boone, Iowa, a run of 340.4 miles, it has been possible to combine trains 7 and 27 westbound, and 8 and 28 eastbound, handling an average of 14 cars per combined train in each direction.

On the Galena Division alone, between Chicago and Clinton, Iowa, a distance of 138 miles, this represents a saving in operating expense of \$6624.00 per month.

Railway Officials everywhere know that—

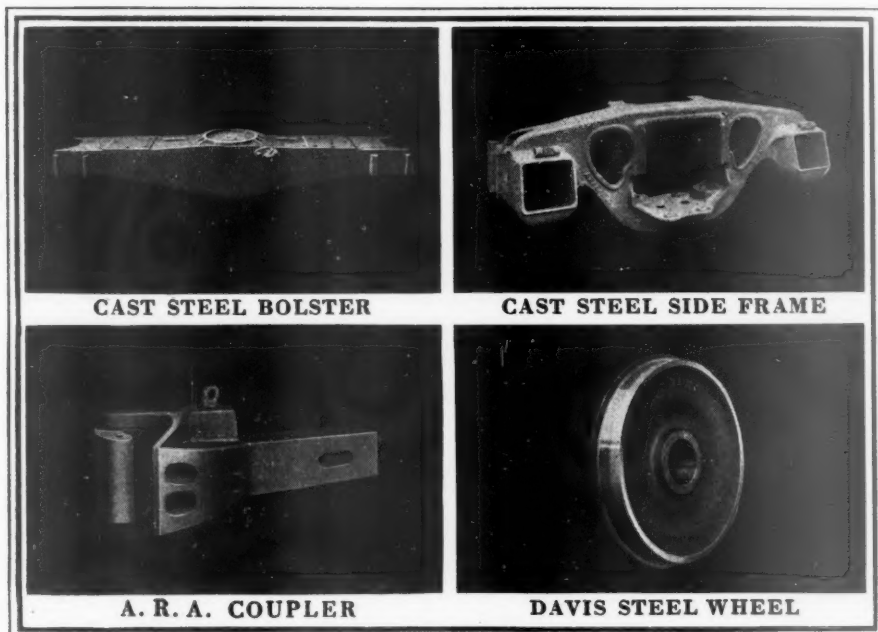
It takes Modern Locomotives to make money these days!



THE
BALDWIN
LOCOMOTIVE WORKS
PHILADELPHIA

AMERICAN STEEL FOUNDRIES

» » » A MANUFACTURER OF
CAST STEEL PRODUCTS THAT HAS
SERVED AND GROWN WITH THE
RAILROAD INDUSTRY SINCE
EIGHTEEN-NINETY-EIGHT



LEADING MANUFACTURER OF
STEEL CASTINGS FOR
INDUSTRIAL AND
RAILROAD
USE



NEW YORK

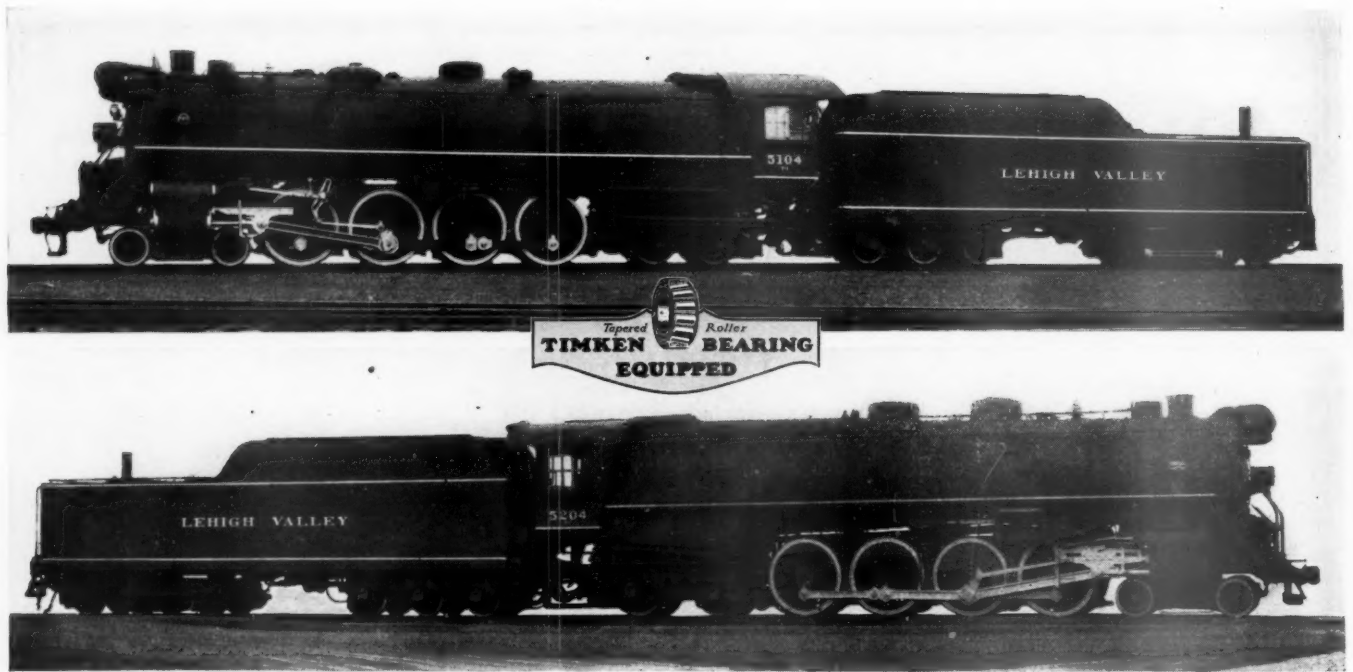
30 CHURCH ST.

CHICAGO

410 NORTH MICHIGAN AVE.

ST. LOUIS

RAILWAY EXCHANGE



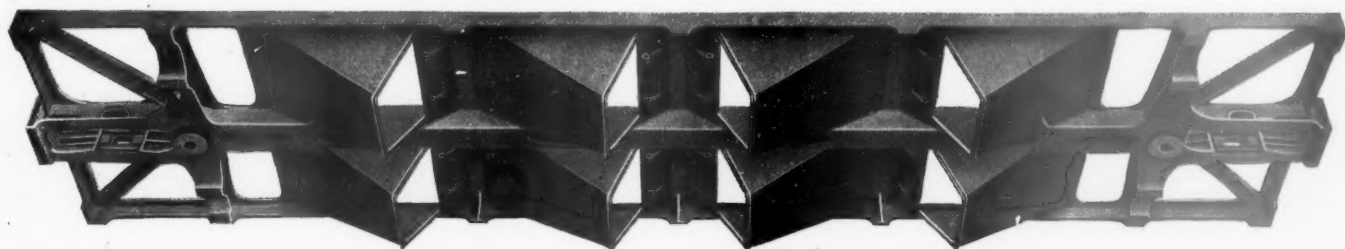
Another proof of Timken dominance in locomotive engine trucks

The Lehigh Valley R. R. recently ordered 20 new Wyoming type 4-8-4 locomotives, 10 to be built by the Baldwin Locomotive Works, and 10 by the American Locomotive Company. It is particularly significant, in view of the intense and growing interest in motive power anti-frictionization, that all of these locomotives will have Timken Bearing Equipped front engine trucks. The specification of Timken Bearings for these new locomotives is the result of Timkens' long record of accomplishment in engine trucks on many roads, including over 100,000 miles of service in the Timken Locomotive, and the superiority they have demonstrated from every point of view—efficiency, dependability, economical operation and low maintenance expense. Timken engine trucks are not merely standard-type trucks equipped with anti-friction bearings, but have been completely designed to enable Timken Tapered Roller Bearings to function with full effectiveness for a maximum period of service with minimum attention. Blue prints and specifications will be furnished promptly upon request.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

Solving... **The Freight Car Problem**



ONE-PIECE CAST STEEL UNDERFRAME WITH HOPPERS INTEGRAL

Commonwealth one-piece underframes for freight cars

greatly increase strength of car...

Resist corrosion from coal and other

sulphurous materials...Materially

reduce upkeep costs of entire

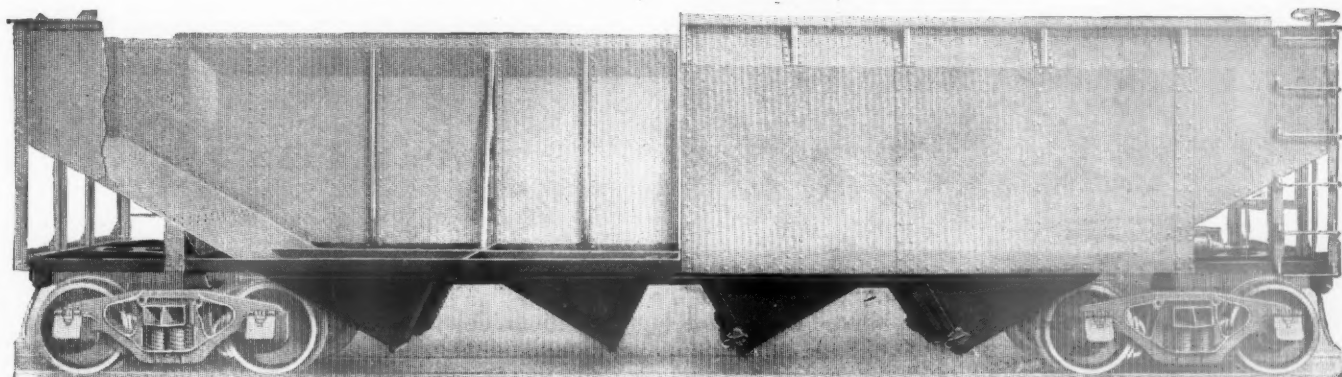
car . . . An excellent investment

for efficiency and economy.

**GENERAL STEEL
CASTINGS CORPORATION**
Eddystone, Pa. ~ Granite City, Ill.

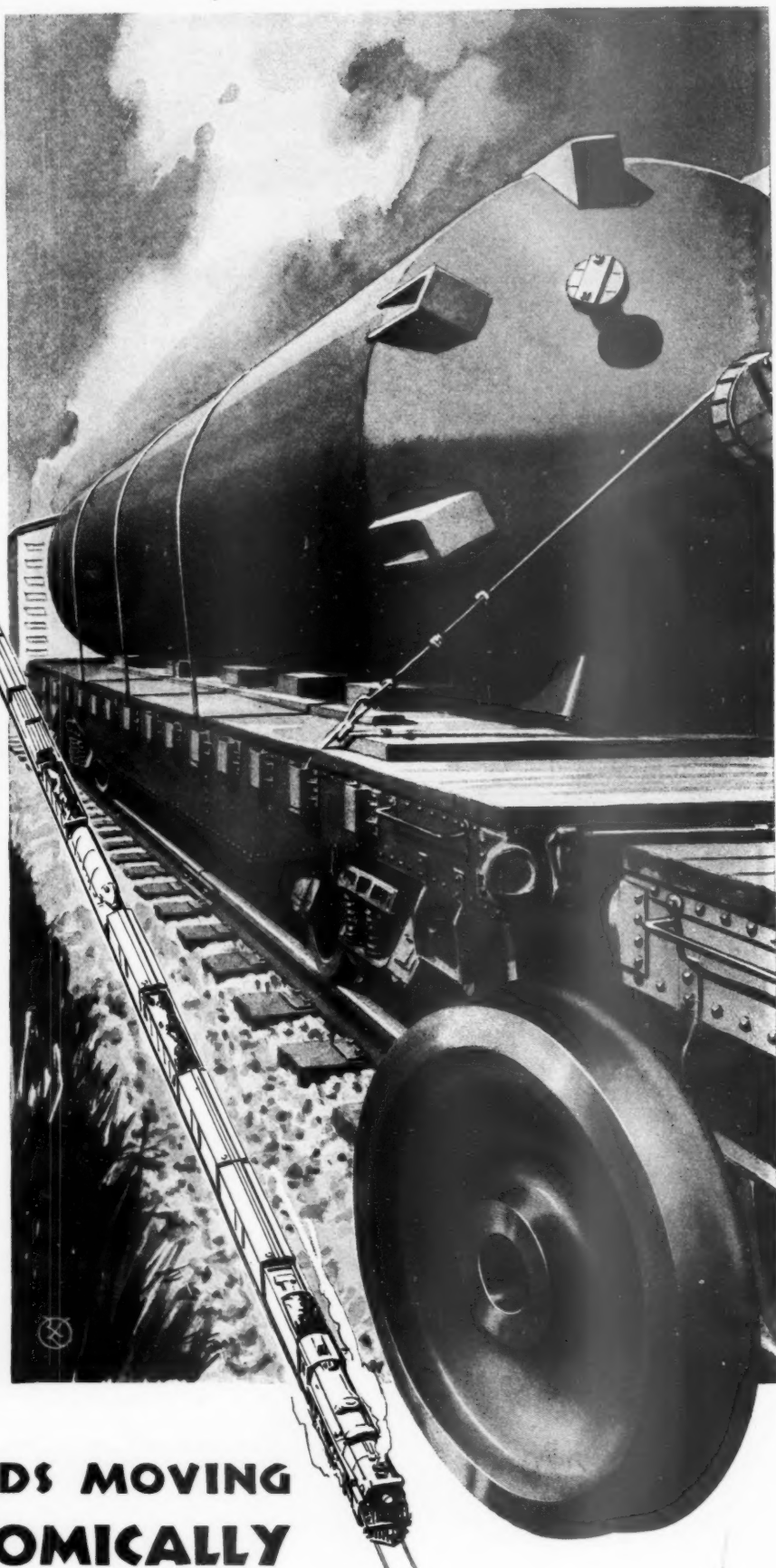
**COMMONWEALTH
• PRODUCTS •**

SELF-CLEARING HOPPER CAR WITH COMMONWEALTH UNDERFRAME



GARY WHEELS

WROUGHT STEEL



EQUIPMENT

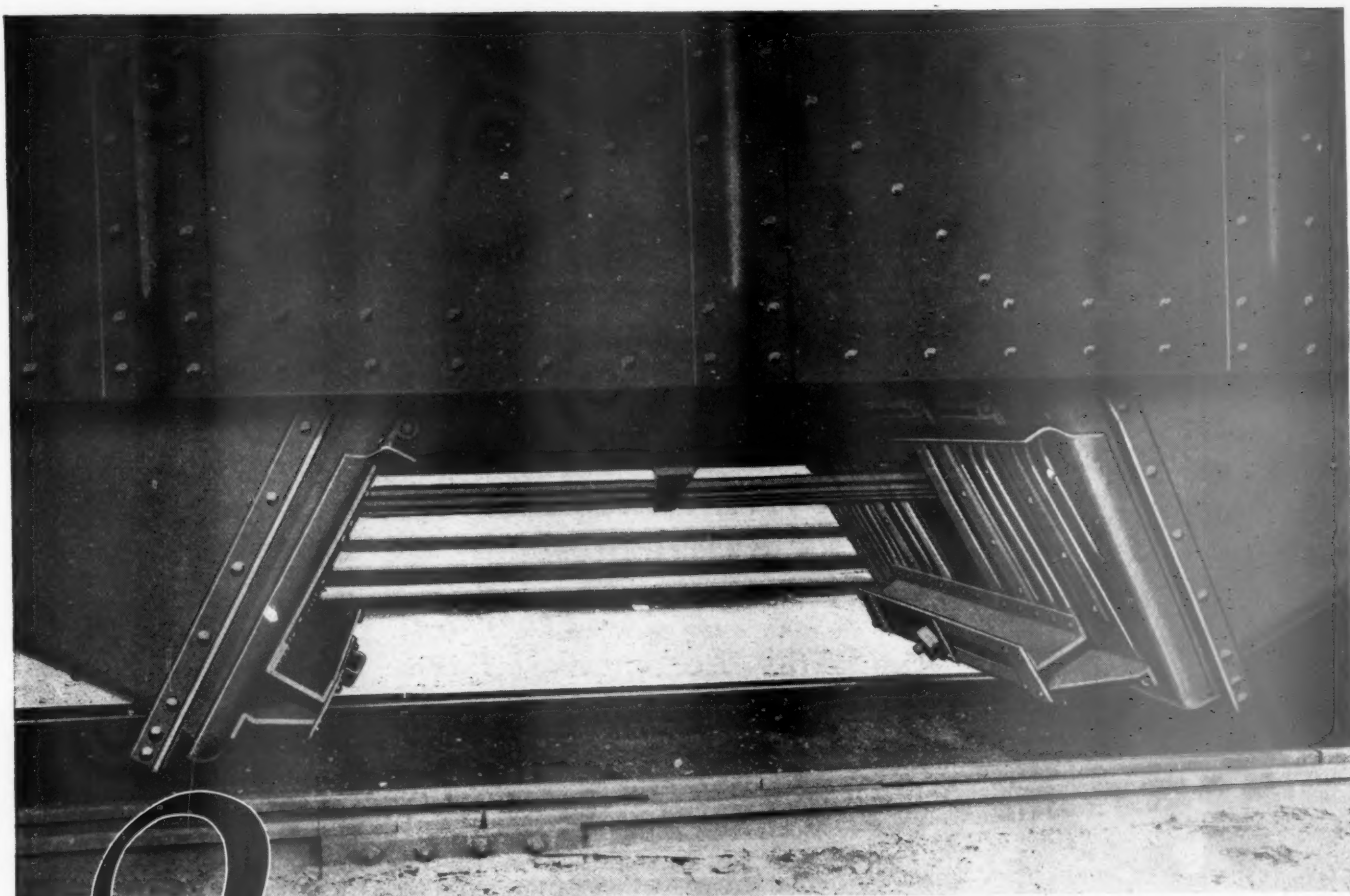
Someone is waiting for every carload that you handle. Someone needs it *at a certain time*. Freight movements must be sure, unhampered by delays. But they permit no penny of extravagance, no concessions to wasteful maintenance.

Illinois Steel Company

Subsidiary of United States Steel Corporation
208 South La Salle Street, Chicago, Ill.



**KEEP YOUR LOADS MOVING
SAFELY—ECONOMICALLY**



Utilization

AJAX
CORRUGATED
DROP DOORS

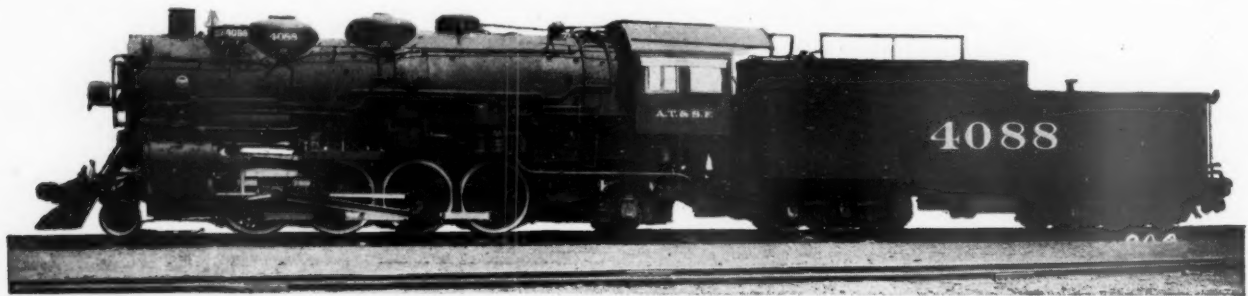
Corrugating a flat plate increases both its strength and resilience. This condition is ideally utilized in Ajax Corrugated Doors which combine these features to withstand present day loading practices.

UNION METAL PRODUCTS CO.

NEW YORK CHICAGO ST. LOUIS WASHINGTON

RICHMOND HOUSTON SAN FRANCISCO

KANSAS CITY MONTREAL



"STANDARD" LOCOMOTIVE PARTS SHOULD BE ECONOMICAL

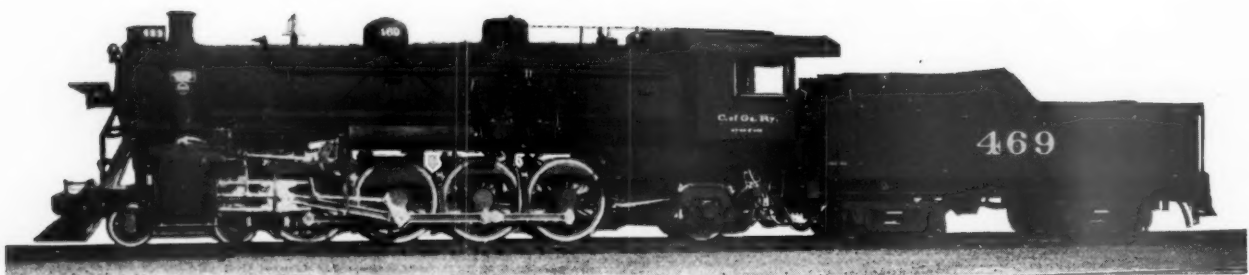
. . . and they are.
 "Standard" Locomotive Parts may look no different from those made elsewhere. But "Standard" steels are made for specific purposes, and "Standard" experience covers locomotive operation in all parts of the world. "Standard" parts should be more economical—and they are.

STANDARD STEEL WORKS COMPANY

General Offices and Works: BURNHAM, PA.

CHICAGO ST. LOUIS PORTLAND
 NEW YORK SAN FRANCISCO PHILADELPHIA AKRON

Tires Billets Wrought Steel Wheels
 Steel Castings Steel Tired Wheels
 Forgings Springs Axles
 Pins Rods



UNDIVIDED RESPONSIBILITY

—a vital factor in signaling service

MODERN signaling systems are dependent upon many items of *electrical equipment*. A weak link at any point in this chain of apparatus may easily result in a costly tie-up or delay in train operations. Westinghouse, a pioneer builder of electrical apparatus for railroads, is serving with undivided responsibility in the field of Signaling system equipment.

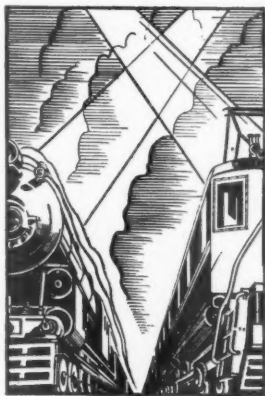
Some of the Westinghouse products for Signaling service are:

SUBSTATION EQUIPMENT

Switching equipment is offered for every service, ranging from the simple "change-over" switches to cut in an emergency power supply, to the more complex multi-panel switchboards for the automatic control of motor-generator or frequency-changer sets and high voltage signaling power feeders. Westinghouse motor-generators and frequency-changers for power supply are available to meet the most exacting requirements of any signaling system.

TRANSFORMERS

Westinghouse pioneered in the development of alternating current generation and distribution, and the cumulative experience of many years in the design of A-C. apparatus is found in Westinghouse transformers for signaling service.



From the smallest low voltage transformers for lighting to the higher voltage types for power distribution, the Westinghouse line of transformers, oil-insulated or dry-type, is suited to every signal requirement. All types meet A. R. A. standards.

LIGHTNING ARRESTERS

Extensive research and field experience ever since the introduction of alternating current by Westinghouse have resulted in the development of protective apparatus which affords the greatest possible surge protection. Autovalve arresters are available for every signaling service, from the low voltage track circuits to the higher voltage feeder lines.

PORCELAIN INSULATORS

Utmost care in the selection of insulators is always rewarded by a decrease in service interruptions. Westinghouse insulators receive the most rigid inspection and tests. They are sold to serve even under the most severe atmospheric conditions of smoke and gases.

DISCONNECTS AND CUTOUTS

For isolating apparatus from the circuit for inspection or repairs or for sectionalizing feeders and power supply circuits, Westinghouse disconnects are available for all requirements of signaling

systems, indoor and outdoor. Westinghouse cutouts, conservatively rated and substantially built, offer overload and short-circuit protection.

PORTABLE INSTRUMENTS

Accurate, rugged and remarkably compact—Westinghouse portable instruments are designed to meet the needs of the Signal Department, and are built in accordance with A.R.A. specifications.

INSULATING MATERIALS

The research and testing facilities of Westinghouse, plus a life-time experience in building electrical apparatus requiring the best possible insulating materials, have resulted in the finest available tapes, varnishes, mica, treated and untreated fabrics and paper which can be purchased. Micarta insulation is also offered in a variety of forms; such as, rods, tubing, angles and plate of almost any thickness.

ADDITIONAL PRODUCTS AND SERVICE

Many other Westinghouse products are on the market for the Signal Department; such as, air compressor motors and control—lighting equipment for offices, drafting rooms and shops—safety switches and panelboards, battery charging sets and concrete poles for power lines. Sales, engineering and service representatives are available throughout a nation-wide chain of offices.

* * *

Undivided responsibility for the successful performance of your electrical equipment is assured when you buy from Westinghouse.

Westinghouse

T 79070

Quality workmanship guarantees every Westinghouse product



SEND FOR BOOKLET

Westinghouse Electric and Manufacturing Company
Room 2-N—East Pittsburgh, Pa.
Gentlemen: Please send me a copy of Circular 1787-A,
Electrical Equipment for Railway Signaling.

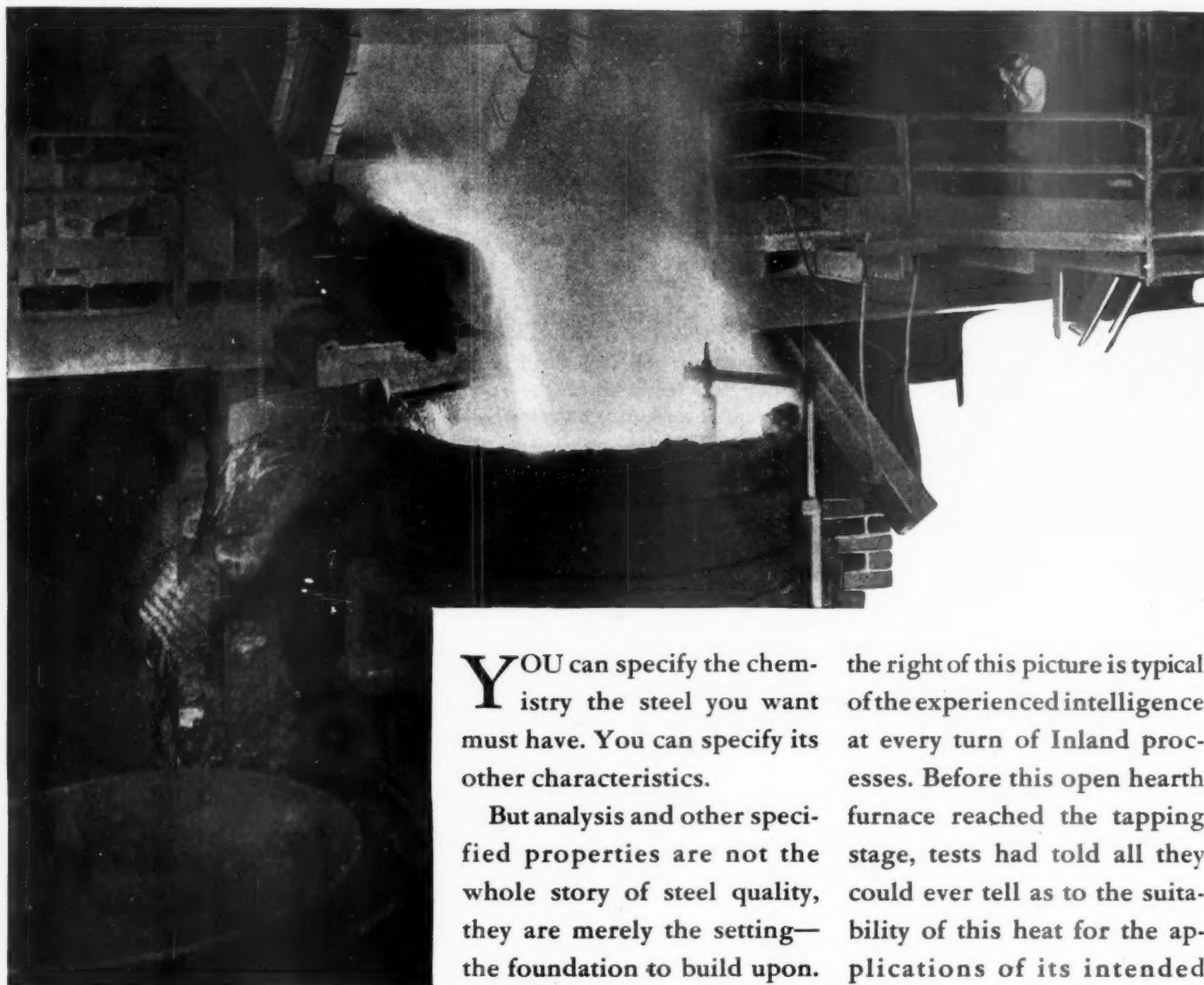
Name

Company

Address

City State RA 3-26-32

HIS PRACTICED EYE PROTECTS YOU WHERE SPECIFICATIONS CANNOT



YOU can specify the chemistry the steel you want must have. You can specify its other characteristics.

But analysis and other specified properties are not the whole story of steel quality, they are merely the setting—the foundation to build upon.

No tests known today can tell quite all of it either. Quality of steel is still finally determined by the experienced brains of the workmen who make it.

The metallurgist you see at

the right of this picture is typical of the experienced intelligence at every turn of Inland processes. Before this open hearth furnace reached the tapping stage, tests had told all they could ever tell as to the suitability of this heat for the applications of its intended buyer. But it remains for the metallurgist's practiced eye finally to judge whether this heat is satisfactory. **INLAND STEEL COMPANY**, 38 South Dearborn St., Chicago, Ill.

INLAND
ABLE SERVANT OF THE CENTRAL WEST
STEEL

Sheets Strip Plates
Bands Structurals Piling

Rails Track Accessories
Bars Rivets Billets

Goodrich *slashes* Trucking Costs



RECENTLY Goodrich announced an important contribution to trucking economy — a tire that will deliver **MORE** miles, **FASTER** miles, **SAFER** miles, **CHEAPER** miles than any truck tire ever before built . . . the new Goodrich Silvertown Truck Balloon . . .

Here are the facts about this great new tire. Read them . . .

22% MORE MILEAGE

Cross section of the New Heavy Duty tread . . . measuring 15% deeper. A tougher tread compound eliminates cutting and chipping — This tread will stand the gaff — gives thousands of additional, safe, trouble-free miles.

IMPROVED TRACTION AND BRAKING

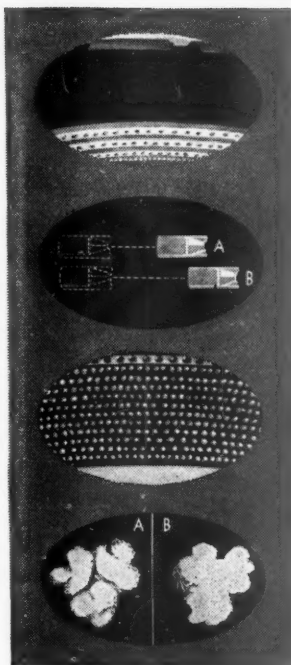
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- Reduced truck depreciation
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NEWS!

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Announced this month

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PRACTICALLY overnight—every bus operator who uses Ethyl Gasoline finds himself with better equipment. Without so much as turning a set-screw he is now getting better performance from every unit. Better performance because he is getting better gasoline.

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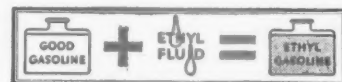
The oil companies selling Ethyl Gasoline have always met the demands of automobile engines. They intend to keep abreast of future needs. The

anti-knock standard of Ethyl Gasoline is raised to make sure that—in the future as in the past—Ethyl will always bring out the full performance of any engine.

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You need never test Ethyl Gasoline. Before a refiner adds Ethyl fluid to his gasoline, a sample goes to one of the Ethyl laboratories, where it must pass strict tests for gum and sulphur content, distillation characteristics and other qualities. Only after it has passed these tests is the prescribed amount of Ethyl fluid added to bring it up to the standard of the new and even better Ethyl Gasoline.

Consider Ethyl for your busses now. Ethyl Gasoline has proved the most economical motor fuel for many operators, under varying conditions of equipment and operation. Now, when economy is most important, Ethyl Gasoline offers you an even greater value, an even higher quality. Ethyl Gasoline Corporation, Chrysler Building, New York City, N. Y.



Ethyl fluid contains lead

ETHYL GASOLINE

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A standard car is economical.

Then why not a standard roof?

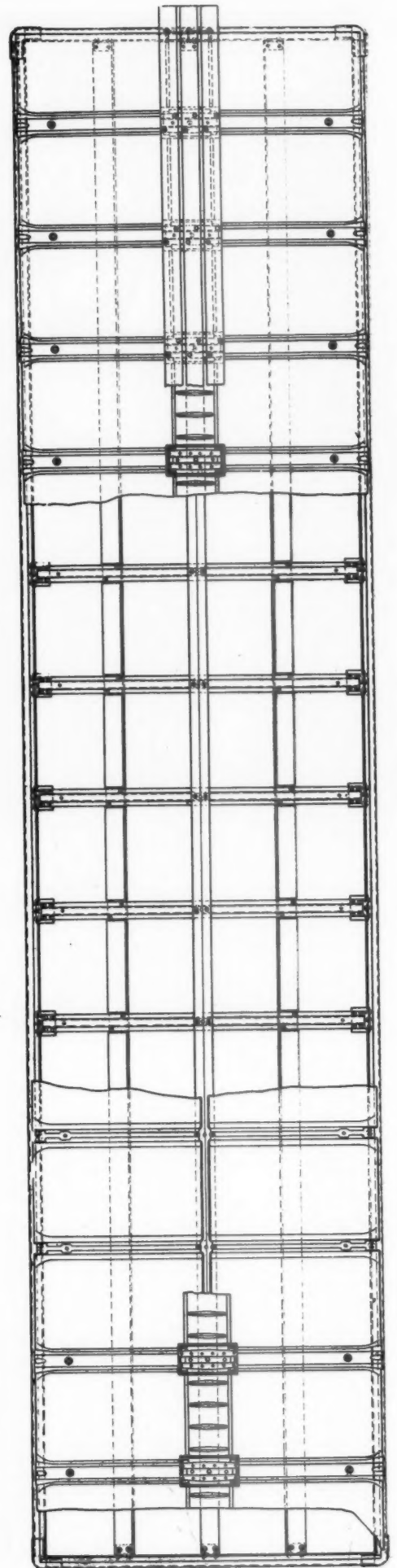
A riveted roof is certainly not a standard roof. (*It is standard only for the size and design of car for which it was made.*)

A standard roof must be a roof that has one size and one design parts that will fit any and all new cars of any size and design, also all existing cars operating on standard gauge tracks.

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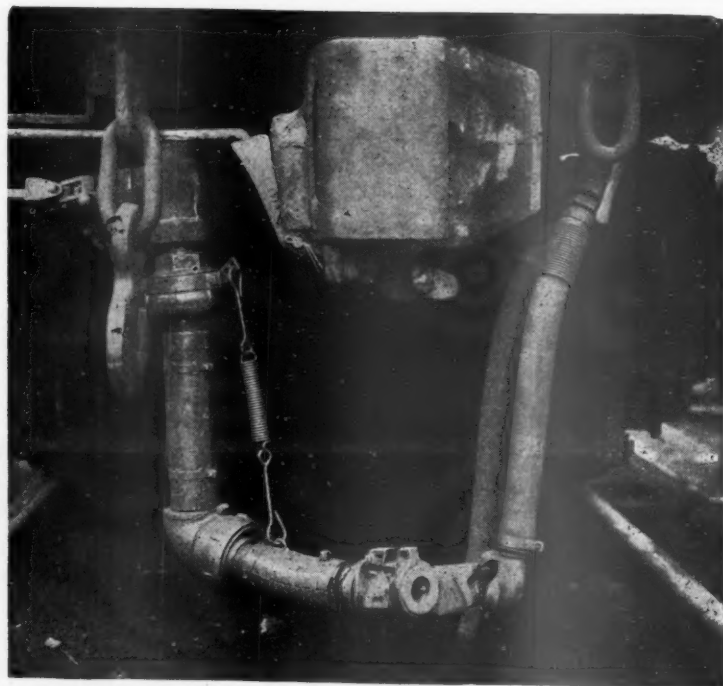
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Up
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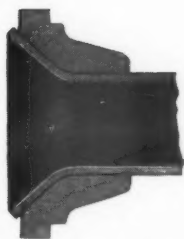


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"A glowing story of pioneer days on various Western railroads."—*Hartford Courant*.

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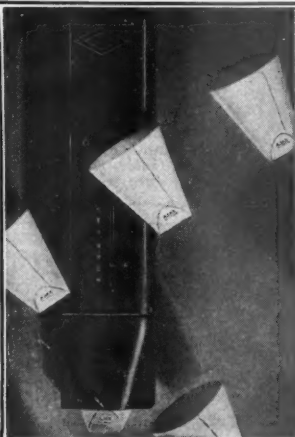
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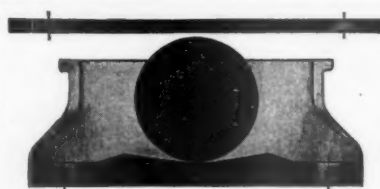
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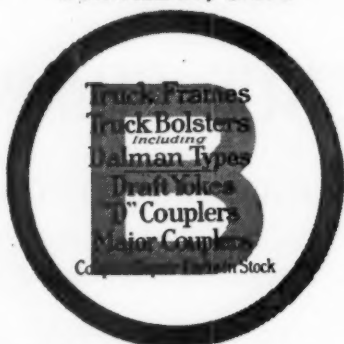
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see Get Together Section
on page 39



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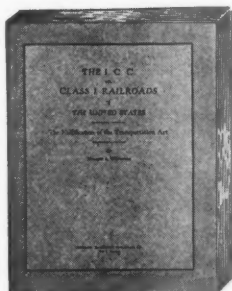
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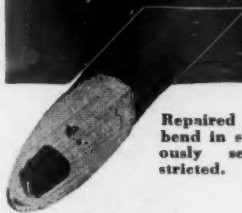
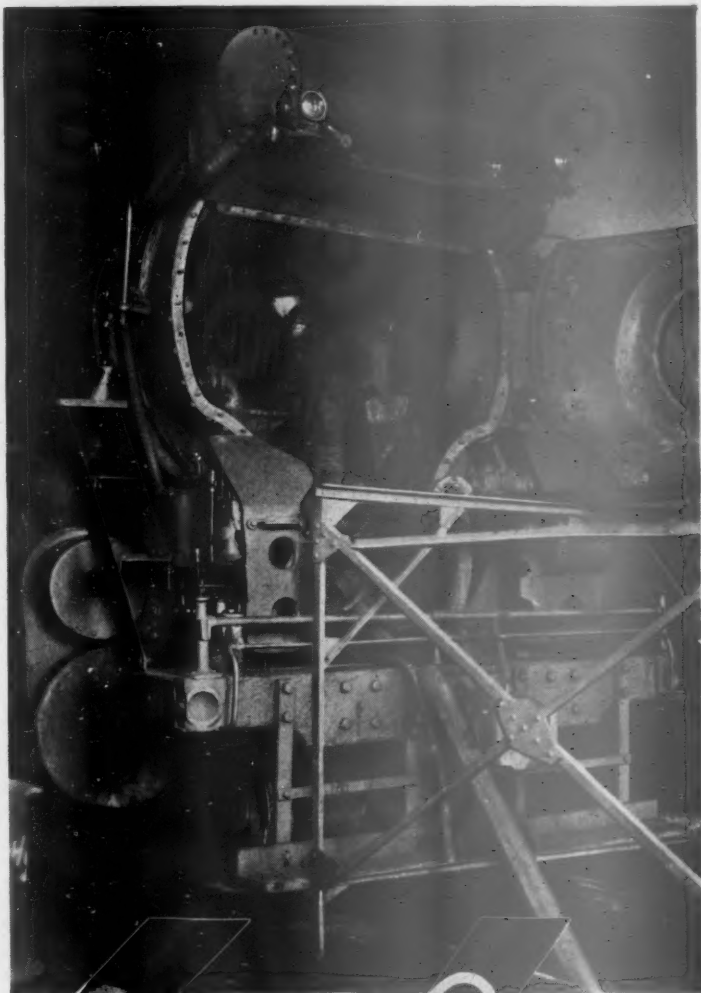
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Reconditioning Superheater Units

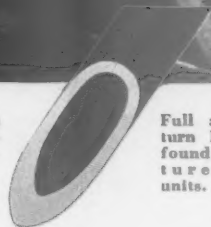
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CHICAGO

Canada: The Superheater Company, Limited, Montreal

MAKING ONE TRACK DO THE WORK OF TWO

Railroads in the early days built double-track lines not because traffic required two tracks but because of the unavoidable delays in single-track operation.

Today by directing train movements by signal indications, delays have been eliminated and efficient and economic operation of single-track has been realized.

During the last few years many miles of double-track main lines have been converted to single-track.

The most extensive continuous section of double-track converted to single-track is on the Great Southern of Ireland, eighty miles of main line, handling traffic of approximately twenty trains daily on the greater portion of the territory.

In its annual report, the Great Southern reported a reduction in expenditures of \$893,460 in 1929 as compared with 1928 which was due in part to:

"eliminating non-earning portions of the company's property, that is to say, by not maintaining two lines where one . . . more than suffices for the efficient discharge of business offered or likely to be offered."



Where traffic does not warrant maintenance of two tracks, studies should be made to determine the economics of removing one track and providing centralized traffic control on the remaining track.

UNION SWITCH & SIGNAL COMPANY
Swissvale, Pennsylvania

GENERAL RAILWAY SIGNAL COMPANY
Rochester, N. Y.



Signals Aid Modern Motive Power to Produce More Ton-Miles Per Train-Hour

